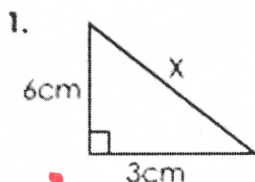


Name: Answer Key Date: \_\_\_\_\_ Period: \_\_\_\_\_

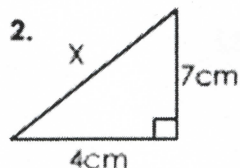
NGA Review Packet

**Part One: Pythagorean Theorem**

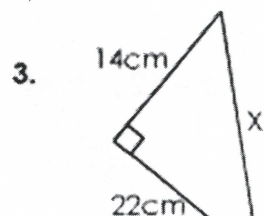
*Directions: Solve for the missing side.*



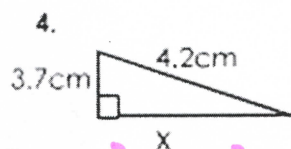
$$\begin{aligned} 6^2 + 3^2 &= x^2 \\ 45 &= x^2 \\ 6.7 \text{ cm} &= x \end{aligned}$$



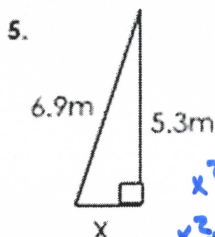
$$\begin{aligned} 4^2 + 7^2 &= x^2 \\ 16 + 49 &= x^2 \\ 65 &= x^2 \\ 8.1 \text{ cm} &= x \end{aligned}$$



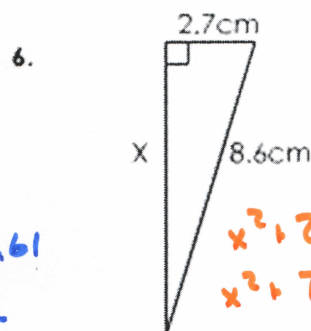
$$\begin{aligned} 14^2 + 22^2 &= x^2 \\ 680 &= x^2 \\ 26.1 \text{ cm} &= x \end{aligned}$$



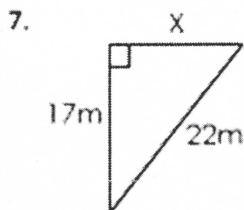
$$\begin{aligned} x^2 + 3.7^2 &= 4.2^2 \\ x^2 + 13.69 &= 17.64 \\ x^2 &= 3.95 \\ x &= 1.99 \text{ cm} \end{aligned}$$



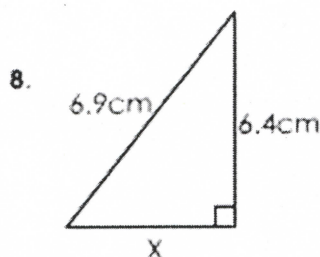
$$\begin{aligned} x^2 + 5.3^2 &= 6.9^2 \\ x^2 + 28.09 &= 47.61 \\ x^2 &= 19.52 \\ x &= 4.42 \text{ cm} \end{aligned}$$



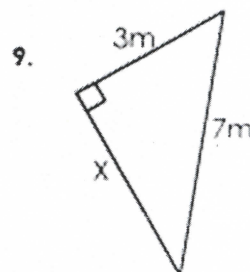
$$\begin{aligned} x^2 + 2.7^2 &= 8.6^2 \\ x^2 + 7.29 &= 73.96 \\ x^2 &= 66.67 \\ x &= 8.17 \text{ cm} \end{aligned}$$



$$\begin{aligned} x^2 + 17^2 &= 22^2 \\ x^2 + 289 &= 484 \\ x^2 &= 195 \\ x &= 13.96 \text{ m} \end{aligned}$$



$$\begin{aligned} x^2 + 6.4^2 &= 6.9^2 \\ x^2 + 40.96 &= 47.61 \\ x^2 &= 6.65 \\ x &= 2.58 \text{ cm} \end{aligned}$$



$$\begin{aligned} x^2 + 3^2 &= 7^2 \\ x^2 + 9 &= 49 \\ x^2 &= 40 \\ x &= 6.32 \text{ m} \end{aligned}$$

10.  $a = 3$ ;  $b = 4$ ;  $c = ?$

$$3^2 + 4^2 = c^2$$

$$25 = c^2$$

$$5 = c$$

11.  $a = 6$ ;  $b = 8$ ;  $c = ?$

$$6^2 + 8^2 = c^2$$

$$100 = c^2$$

$$10 = c$$

12.  $a = 12$ ;  $b = ?$ ;  $c = 22$

$$12^2 + b^2 = 22^2$$

$$144 + b^2 = 484$$

$$b^2 = 340$$

$$b = 18.44$$

13.  $a = 9$ ;  $b = ?$ ;  $c = 13$

$$9^2 + b^2 = 13^2$$

$$81 + b^2 = 169$$

$$b^2 = 88$$

$$b = 9.38$$

14.  $a = ?$ ;  $b = 20$ ;  $c = 23$

$$a^2 + 20^2 = 23^2$$

$$a^2 + 400 = 529$$

$$a^2 = 129$$

$$a = 11.36$$

15.  $a = ?$ ;  $b = 10$ ;  $c = 17$

$$a^2 + 10^2 = 17^2$$

$$a^2 + 100 = 289$$

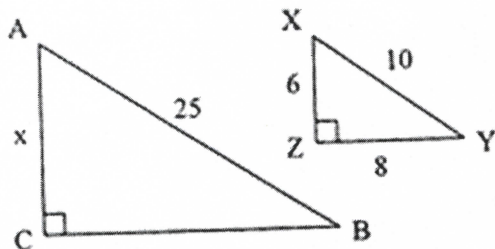
$$a^2 = 189$$

$$a = 13.75$$

## Part Two: Similar Triangles and Scale Factor

Directions: Solve for the missing side using scale factor.

1.  $\triangle ABC \sim \triangle XYZ$

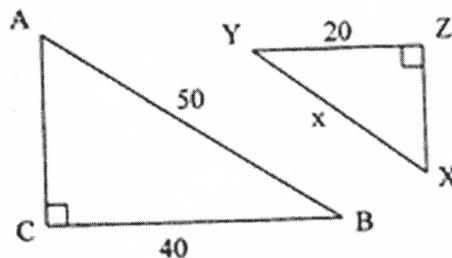


$$\frac{6}{x} = \frac{10}{25} \quad 10x = 6 \cdot 25$$

$$10x = 150$$

$$x = 15$$

2.  $\triangle ABC \sim \triangle XYZ$

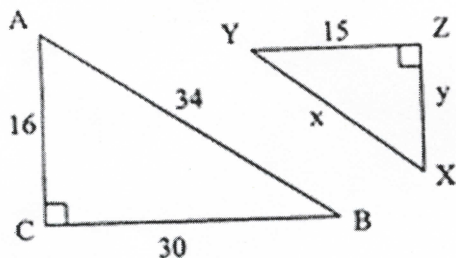


$$\frac{x}{50} = \frac{20}{40} \quad 40x = 50 \cdot 20$$

$$40x = 1000$$

$$x = 25$$

3.  $\triangle ABC \sim \triangle XYZ$



$$\frac{x}{34} = \frac{15}{30}$$

$$30x = 510$$

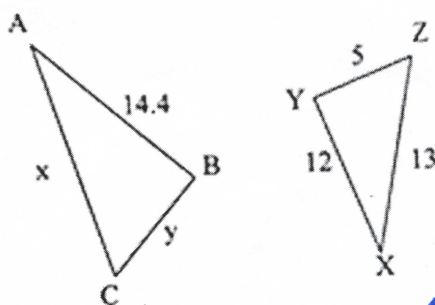
$$x = 17$$

$$\frac{y}{16} = \frac{15}{30}$$

$$30y = 240$$

$$y = 8$$

4.  $\triangle ABC \sim \triangle XYZ$



$$\frac{13}{x} = \frac{12}{14.4}$$

$$12x = 13 \cdot 14.4$$

$$12x = 187.2$$

$$x = 15.6$$

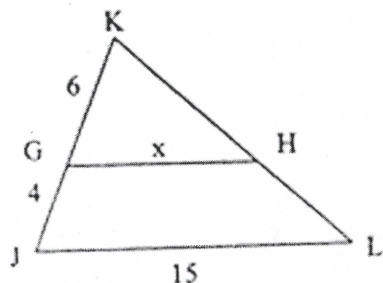
$$\frac{5}{y} = \frac{12}{14.4}$$

$$5 \cdot 14.4 = 12y$$

$$72 = 12y$$

$$6 = y$$

5.  $\triangle JKL \sim \triangle GKH$



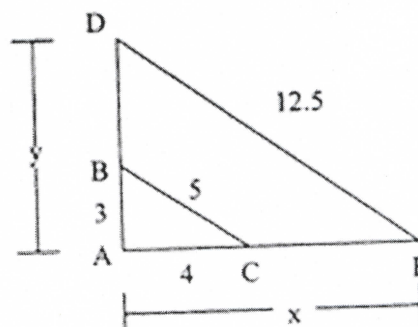
$$\frac{x}{15} = \frac{6}{10}$$

$$10x = 6 \cdot 15$$

$$10x = 90$$

$$x = 9$$

6.  $\triangle ABC \sim \triangle ADE$



$$\frac{4}{x} = \frac{5}{12.5}$$

$$5x = 4 \cdot 12.5$$

$$5x = 50$$

$$x = 10$$

$$\frac{3}{y} = \frac{5}{12.5}$$

$$5y = 3 \cdot 12.5$$

$$5y = 37.5$$

$$y = 7.5$$